

Dr Vasiliki Katsardi

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Lecturer
Civil Engineering Department
University of Thessaly

Curriculum Vitae



November 2015

PERSONAL INFORMATION

Born in 16th November 1978
Married, Mother of two children

EDUCATION

- 2007 Imperial College, London
Department of Civil & Environmental Engineering
- PhD Thesis title: Surface Water Waves in Intermediate and Shallow Water Depths.
- 2002 Democritus University of Thrace
Department of Civil Engineering
- MSc in Hydraulic Engineering
 - Specialisation: Port & Harbour Engineering
- MSc Thesis: Wave Refraction – Application in the area “Mari” in Cyprus. *Grade: 10*
- 2001
- Civil Engineering
 - Grade: 7.82 (Very Good)
- Diploma thesis: Wave Propagation over arbitrary bottom topography – Application in the area of Atherinolakkos in Crete. *Grade: 10*
- Award TCG (Details on issue TCG 2242)

PUBLICATIONS

INTERNATIONAL SCIENTIFIC JOURNALS

- (1) Tsoukala V.K., Katsardi V., Hadjibiros K., Moutzouris C.I., 2015, *Beach Erosion and Consequential Impacts Due to the Presence of Harbours in Sandy Beaches in Greece and Cyprus*, Environmental Processes, 2(1), 55-71
- (2) Tsoukala V.K., Katsardi V., Belibassakis K.A., 2014, *Wave transformation through flushing culverts operating at seawater level in coastal structures*, Ocean Engineering, pp. 211-229.
- (3) Belibassakis, K.A., Tsoukala, V.K., Katsardi V., 2014, *Three dimensional wave diffraction in the vicinity of openings in coastal structures*, Applied Ocean Research, 45, 40-54.
- (4) Katsardi V., de Lutio L., Swan C., 2013, *An experimental study of large waves in intermediate and shallow water depths. Part I: Wave height and crest height statistics*, Coastal Engineering, 73, 43-57.
- (5) Bateman, W.J.D., Katsardi, V., & Swan, C., 2011, *Realistic descriptions of extreme ocean waves; the application of recent advances in wave*

modelling, Applied Ocean Research, Vol.34, 209-224.

- (6) Katsardi V., Swan C., 2010, *On the Description of Large Shallow Water Waves. Part I: Uni-Directional Seas*, Royal Society, Series A, 467, 778-805.

INTERNATIONAL SCIENTIFIC CONFERENCES

- (1) Chatziioannou K., Katsardi V., Mistakidis E., 2015, *The importance of accurate calculation of the nonlinear extreme wave kinematics in the design of offshore platforms*, 16th International Congress of the International Maritime Association of the Mediterranean IMAM 2015 - Towards Green Marine Technology and Transport, Pula, Croatia.
- (2) Tsoukala V.K., Pyrpiri Th., Chondros M., Katsardi V., 2015, *Prediction of wave transmission coefficient using neural networks and experimental measurements*, 16th International Congress of the International Maritime Association of the Mediterranean IMAM 2015 - Towards Green Marine Technology and Transport, Pula, Croatia.
- (3) Chatziioannou K., Katsardi V., Koukouselis A., Mistakidis E., 2015, *Response of offshore structures under the effect of real sea states including structural and soil nonlinearities*, 8th GRACM International Congress on Computational Mechanics, Volos, 12 – 15 July 2015, Greece.
- (4) Haniffah M.R.M., Taylor P.H., Swan C., Katsardi V., Borthwick A.G.L., 2014, *Large Events in Waves on the Continental Shelf*, Civil Engineering Research in Ireland, CERI 2014, Queen's University Belfast
- (5) Katsardi V., Tsoukala V.K., Moutzouris K., 2014, *Beach erosion due to the presence of harbours in sandy beaches: the case of Greece in comparison with international observations*, 12th International Conference on Protection and Restoration of the Environment, PRE12, Skiathos, Greece.
- (6) Tsoukala V.K., Katsardi V., Hadjibiros K., 2014, *Environmental and socio economic issues concerning the interaction of harbours with their adjacent coasts*, 12th International Conference on Protection and Restoration of the Environment, PRE12, Skiathos, Greece.
- (7) Chondros M., Katsardi V., Tsoukala V.K., Belibassakis K., 2014, *Experimental verification of a new 3D numerical model involving wave transformation through flushing culverts*. Full paper accepted for publication in the 3rd IAHR Europe congress, Porto April 2014.
- (8) Belibassakis K.A., Athanassoulis, G.A., Gerostathis Th.P., Katsardi V., 2013, *Transformation of wave conditions in nearshore and coastal areas by a 3D coupled-mode wave model Intern. Maritime Association Mediterranean Conference, IMAM 2013, La Coruna, Spain*
- (9) Katsardi V., Tsoukala V.K., Belibassakis K., 2013, *3D Wave transformation through openings in coastal structures*. Proceedings of the 32nd International Conference on Offshore Mechanics and Arctic Engineering, OMAE2013, Nantes, France.
- (10) Katsardi V., Tsoukala V.K., Belibassakis K., 2013, *Estimation of wave transmission trough flushing culverts in breakwaters*. Proceedings of the 32nd International Conference on Offshore Mechanics and Arctic Engineering, OMAE2013, Nantes, France.

- (11) Katsardi V., Boundris I., Tsoukala V.K., Belibassakis K., 2012, *A numerical study of wave transmission in coastal structures through flushing culverts*, Proceedings of the 22nd International Ocean and Polar Engineering Conference, ISOPE2012, Rhodes, Greece
- (12) Katsardi V., Swan C., 2011, *An experimental study of shallow water wave statistics on mild bed slopes*, Proceedings of the 30th International Conference on Offshore Mechanics and Arctic Engineering, OMAE2011, Rotterdam, The Netherlands.
- (13) Katsardi V., Swan C., 2006, *The importance of directionality in evolution of large waves in intermediate and shallow water depths*, Proceedings of the 30th International Conference on Coastal Engineering, ICCE2006, San Diego, California, USA
- (14) Katsardi V., Swan C., 2005, *The effect of reduced water depth on the description of extreme waves and the prediction of water particle kinematics*, Proceedings of the 24th International Conference on Offshore Mechanics and Arctic Engineering, OMAE2005, Halkidiki, Greece
Σημείωση: Reviewer recommended the paper acceptable with honors.
- (15) Katsardi V., Swan C., 2004, *The evolution of large waves in shallow water*, Proceedings of the 29th International Conference on Coastal Engineering, ICCE2004, Lisbon, Portugal

GREEK SCIENTIFIC CONFERENCES

- (1) Pырpiri Th., Chondros M., Katsardi V., Tsoukala V.K., 2015, Prediction of wave transmission coefficient using neural networks and experimental measurements. 3rd common conference: 13th Hellenic Hydrotechnical Association, 9th Greek Committee for Water Resources Management, 1st Hellenic Water Association, Athens 2015.
- (2) Tsoukala, V., Stamou, A.I., Katsardi, V., Giantsi, Th., Belibassakis, K.A., Moutzouris, K. I., 2015, Experimental and numerical simulations of flushing culverts for the environmental design of marinas., 1st Hellenic Conference of Touristic Harbours, Marinas, Athens, 77-88.
- (3) Katsardi, V., Tsoukala, V., Moutzouris, K., 2014, *Beach erosion due to the presence of harbours in sandy beaches: The diffraction-associated mechanism*, 6th Hellenic Conference of Management and Improvement of Coastal Zones, November 2014, Athens. (In Greek).
- (4) Katsardi, V., Tsoukala, V., Moutzouris, K., 2011, *Wave action amplification, downstream of harbours, due to the presence of breakwaters*, 5th Hellenic

Conference of Management and Improvement of Coastal Zones, November 2011, Athens. (In Greek).

- (5) Katsardi, V., Swan, C., 2010, Nonlinear Calculations of Extreme Wave Kinematics Appropriate to Load Calculations on a Jack-up in Shallow Water, 5th Hellenic Conference of Harbor Works, November 2010, Athens. (In Greek).
- (6) Matsoukis P. F., Toufexi, X., Katsardi, V., 2002, Wave propagation over sudden changes of bed bathymetry, 3rd Hellenic Conference of Port Structures 2002, Athens. (In Greek)

REVIEWER IN SCIENTIFIC JOURNALS AND CONFERENCES

Journals: Royal Society Proceedings Series A, Journal of Sound and Vibration, Applied Ocean Research, Ocean Engineering, Journal of Oceanography and Marine Science

Conferences: 32nd International Conference on Offshore Mechanics and Arctic Engineering, OMAE2013; 30th International Conference on Offshore Mechanics and Arctic Engineering, OMAE2011

CITATIONS

- 1 Jiang, F. ; Tang, X.-C. ; Jin, Z. ; Zhang, L. ; Chen, H.-Z., 2015, Numerical method for wave forces acting on partially perforated caisson, China Ocean Engineering, 29, 197-208, doi: 10.1007/s13344-015-0081-4
- 2 Drozdik R., 2015, Dynamic Positioning for ROV Operating in Fish Farms, Master of Science in Cybernetics and Robotics, Department of Engineering Cybernetics, Norwegian University of Science and Technology.
- 3 Wang Z. and Xiao H., 2015, A new Development of reduced Hamiltonian equations for ocean surface waves: an extension from small to finite amplitude., Applied Mathematics and Mechanics, 36(11), 1135-1144, In Chinese
- 4 Wu Y., Randell D., Christou M., Ewans K., Jonathan P., 2015, On the distribution of wave height in shallow water, submitted to Coastal Engineering
- 5 J.E. Salmon, L.H. Holthuijsen, 2015, Modeling depth-induced wave breaking over complex coastal bathymetries, Coastal Engineering, 105, 21-35, <http://dx.doi.org/10.1016/j.coastaleng.2015.08.002>
- 6 X. Barthelemy, M.L. Banner, W.L. Peirson, F. Dias and M. Allis, 2015 On the local properties of highly nonlinear unsteady gravity water waves. Part 1. Slowdown, kinematics and energetics, Submitted to JFM
- 7 J.E. Salmon, L.H. Holthuijsen, M. Zijlema, G.Ph. van Vledder, J.D. Pietrzak,

- Scaling depth-induced wave-breaking in two-dimensional spectral wave models, *Ocean Modelling*, Available online 13 January 2015, ISSN 1463-5003, <http://dx.doi.org/10.1016/j.ocemod.2014.12.011>.
- 8 Tiron, R., Mallon, F., Dias, F., Reynaud, E.G. The challenging life of wave energy devices at sea: A few points to consider (2015) *Renewable and Sustainable Energy Reviews*, 43, pp. 1263-1272.
 - 9 Guohai Dong, Hongzhou Chen, Yuxiang Ma, *Parameterization of nonlinear shallow water waves over sloping bottoms*, *Coastal Engineering*, Volume 94, December 2014, Pages 23-32, ISSN 0378-3839, <http://dx.doi.org/10.1016/j.coastaleng.2014.08.012>.
 - 10 Felice Arena, Giovanni Malara, Alessandra Romolo, *On long-term statistics of High waves via the equivalent power storm model*, *Probabilistic Engineering Mechanics*, <http://dx.doi.org/10.1016/j.probengmech.2014.04.003>
 - 11 Shemer, L. and Alperovich, L., *Peregrine breather revisited*, *Physics of Fluids*, 25, 051701 (2013), DOI: <http://dx.doi.org/10.1063/1.4807055>
 - 12 Eva Thorborg Mørk · Lise Lotte Sørensen · Bjarne Jensen · Mikael K. Sejr, 2013, *Air–Sea CO₂ Gas Transfer Velocity in a Shallow Estuary*, *Boundary-Layer Meteorology*, Page 1, DOI 10.1007/s10546-013-9869-z.
 - 13 Xu, Dali, et al. 2012, *On the steady-state fully resonant progressive waves in water of finite depth*. *Journal of Fluid Mechanics* 1.1: 1-40.
 - 14 Thomas A. A. Adcock, Richard H. Gibbs, and Paul H. Taylor *The nonlinear evolution and approximate scaling of directionally spread wave groups on deep water.*, *Proc R Soc A* 2012 468: 2704-2721.
 - 15 Salmon J., Holthuijsen, L.H., 2011, *Re-scaling the Battjes-Janssen model for depth induced wave breaking*, *Proceedings of the 12th International Workshop on Wave Hindcasting and Forecasting & 3rd Coastal Hazard Symposium*, Kohala Coast, Hawaii, USA, Available online at <http://www.waveworkshop.org/>
 - 16 Adcock T.A.A., Taylor P.H., Yan S., Ma Q.W., Janssen P.A.E.M, 2011, *Did the Draupner wave occur in a crossing sea?*, *Proc. Royal Society Series A*, Available online from 15th June 2011.
 - 17 Ewans K., Christou M., 2009-2010, *Limits on Waves in Shallow Water*, Phase II Report.
 - 18 Bredmose H., Hunt-Raby A., Jayaratne R., Bullock G.N., 2009, *The ideal flip-through impact: experimental and numerical investigation*, *J. Eng. Math*, 67(1-2), 115-136.
 - 19 Hoyle M.J.R, Smith S.F., Ahilan R.V., Hunt R.J., Marcom M.R., 2009, *Further Work on the Effects of Nonlinear Wave Spreading and its Impact on Current Jack-up Assessment Practice*, *Offshore Technology Conference*, Houston, Texas, USA.
 - 20 Christou M., 2009, *Fully nonlinear computations of waves and wave-structure interaction*, PhD Thesis.
 - 21 Hague C., 2006, *Fully Nonlinear Computations of Directional*

- Waves, Including Wave Breaking*, PhD Thesis.
- 22 Hague C.H., Swan C., 2006, *Limiting Waves in Broad-Banded, Directionally Spread Seas*, ISOPE 2006.
- 23 Hutchison, B., Appolonov, E.M., Guedes Soares, C., Kleiven, G., Prevosto, M., Rahman, T., Rebaudengo Landó, L., Shaw, C., Smith, D., Tomita, H., 2006, Committee I.1, Environment, *Modelling of Environmental Phenomena - Shallow water Waves*, 16th International Ship and Offshore Structures Congress, Southampton, UK, PA Frieze, RA Shenoi, 5-86
- 24 Taylor P. H., 2004, *Rogue Waves and wave focusing - speculations on theory, numerical results and observations*, Rogue Waves Workshop.

TEACHING EXPERIENCE

From March 2016	University of Thessaly , <i>Department of Civil Engineering</i> Lecturer Undergraduate: 1. Maritime Hydraulics and Harbour Engineering 2. Wave Mechanics and Offshore Structures Postgraduate: Wave-structure interactions - Offshore structures
July 2014 – Sep 2015	Undergraduate: 1. Coastal Engineering and Port Works 2. Wave Mechanics and Coastal Oceanography
Feb. 2014 – July 2014 and Feb. 2012 – July 2012	Undergraduate: Coastal Engineering and Port Works (Adjunct Professor)
Feb. 2012 – July 2012	Postgraduate: Simulation and management of coastal water systems
Nov. 2011 – Jan. 2012	Democritus University of Thrace, <i>Department of Civil Engineering</i> Postgraduate: Simulation of coastal processes (Visitor Professor – co-teaching with Prof. P.F. Matsoukis)
Oct. 2007 – Sep. 2013	Technological Educational Institute of Athens <i>Department of Civil Works and Infrastructure Technology</i> <i>Adjunct Assistant Professor</i> 1. Coastal Engineering 2. Dams and Rivers Arrangements 3. Port Engineering 4. Hydrology

- Laboratory Professor
1. Hydraulics Laboratory
- Oct. 2008 – Feb. 2009 School of Pedagogical & Technological Education Athens
Department of Civil & Structural Engineering Educators
Adjunct Laboratory Professor
1. Hydraulics Laboratory
- Sep. 2003 – Apr. 2006 Imperial College, London
Department of Civil & Environmental Engineering
- PhD candidate*
Graduate teaching assistant:
1. Coastal Engineering
2. Wave Mechanics
3. Applied Hydraulics
4. Open Channel Hydraulics Lab
5. Supervision of the Fluid Mechanics Design Project
6. Structural Mechanics
7. Computer Application in Engineering, Fortran 95
8. Computer Application in Engineering, Fortran 95 and computer packages
- Distinction as the most effective graduate teaching assistant for the academic year 2003-2004 by a student's poll.*
- Sep. 2004 – Apr. 2006 Member of the prospective undergraduate students committee for the academic years 2005-2006 and 2006-2007.

PROFESSIONAL EXPERIENCE

- ΣΕΠ. 2001 – Today
Synopsis
- Civil Engineer
- Civil Engineer, wave-mechanics specialist dealing with both off-shore and near-shore projects. Calculations of wave factors, wave forces, beach erosion and project design.
- Employers:
- ConocoPhillips, Houston, USA,
Marin, (Maritime Research Institute Netherlands),
Noble Denton Ltd., London, UK,
SHELL International Exploration and Production (SIEP), The Netherlands,
Statoil, Norway
Woodside Energy Plc., Perth, Australia,
- University of Thessaly, Volos
Imperial College, London, UK,
National Technical University of Athens,
Democritus University of Thrace,

AΔK Consulting Engineers SA, Athens.

Clearchos G. Routsis, Engineering Company, Athens.

RESEARCH PROJECTS

- 2012 *Model Tests for assessing the wave run-up and the associated fluid loads on structural members located at various heights on the platform Sleipner A GBS. C. Swan & V. Katsardi*
(3 months)
Employers: Imperial College, London and Statoil, Norway
- 2012 *EU project: "Archimedes III" entitled :
"Hydroelastic response of large floating structures and arbitrarily shaped bodies in an environment of varying 3D bathymetry"*
(33 months)
Member of the research team, Co-ordinators: Assistant Professor F. Kokkinos and Associate Professor K. Belibassakis
- 2011 *Post-doctoral Part-time Research Associate of a 30 month project, funded by NTUA.*
(30 months)
Basic Research Project 2010: "Wave transmission in harbors through flushing culverts, a numerical and experimental study"
Supervisor: Dr. V. Tsoukala, Senior Lecturer, External Participant: Dr. K. Belibassakis, Associate Professor in School of Naval Architecture and Marine Engineering
- 2011 *Protection and Improvement Study in the coastal area of Ormideia, Cyprus, Phase II: Alternative solutions.*
(3 months)
Member of the Research team, Head of the project: Prof. K. Moutzouris
- 2011 *"Wave action amplification, downstream of harbours, due to the presence of breakwaters"*
(3 months)
Supervisor: Professor K. Moutzouris, NTUA
- 2010 *CREST: Cooperative Research in Extreme Seas and their Impact, C. Swan, S. Archibald, V. Katsardi, M. Latheef, J. Roos & F. Stevanato*
(1 month)
Employers: Imperial College, London and Marin (Maritime Research Institute Netherlands)
- 2009 *Predictions of the Nonlinear Water Particle Kinematics Beneath Extreme Waves in a Variety of Water Depths, An International Guide, C. Swan & V. Katsardi*
(9 months)
Employers: Imperial College, London and SHELL UK Ltd., Aberdeen, Scotland.
- 2008 *Wave Induced Loads on sea bed pipelines - Extension, C. Swan & V. Katsardi*
(3 months)
Employers: Imperial College, London and Woodside Energy Plc, Perth Australia.
- 2007 *Wave Induced Loads on sea bed pipelines, C. Swan & V. Katsardi*
(5 months)
Employers: Imperial College, London and Woodside Energy Plc, Perth Australia.
- 2007 *Calculation of the Nonlinear Water Particle Kinematics at the Ekofisk field, C. Swan & V. Katsardi*
(3 months)
Employers: Imperial College, London; BP Ltd., London and ConocoPhillips, Houston, USA .
- 2007 *Nonlinear Calculations of Extreme Wave Kinematics Appropriate to Load Calculations on a Jack-up in Shallow Water, C. Swan & V. Katsardi*
(3 months)
Employers: Imperial College, London και Noble Denton Ltd., London.

- 2007 *Safe Offloading from Floating LNG Platforms, C. Swan, M. Peric, V. Katsardi*
 (1 year) Employer: Imperial College, London. Funded by: E.U.
- 2006 *LoWiSh- Limits on Waves in Shallow Water – Experimental Investigation, C. Swan & V. Katsardi*
 (2 years) Employers: Imperial College, London and International Association of Oil and Gas Producers (OGP) with a supervision of Shell International E&P Ltd., Hague, The Netherlands.
- 2001 *«The Mari» Port in Cyprus: Computational calculation of the wave conditions in the harbor interior, P.F. Matsoukis, V. Katsardi, Ch. Nomikou & M. Xydas*
 (2 months) Employers: DUTH & NTUA

INVITED TALKS

- April 2008 *«Surface Water Waves in Intermediate and Shallow Water Depths»* in the School of Naval Architecture and Marine Engineering, NTUA.
- May 2007 *«Non-linear Surface Waves in Shallow and Intermediate Water»* στην Society of Underwater Technology, Group on Environmental Forces (SUTGEF).
- November 2006 *«The importance of directionality in evolution of large waves in intermediate and shallow water depths»* Imperial College, for Ove Gudmestad (Statoil).
- November 2005 *«The effect of reduced water depth on the description of extreme waves and the prediction of water particle kinematics»* Imperial College, for Ove Gudmestad (Statoil).